

Abstract of the Disclosure

Polynucleotide constructs encoding growth factor independent catalytically active membrane targeted PI 3-kinase mutants useful for therapeutic and research purposes are described. In addition, a method for using the polynucleotide constructs to screen for

5 inhibitors of PI 3-kinase, a method for making 3' phosphorylated inositol phospholipids, methods of reducing cell death after trauma, and methods of overcoming insulin resistance are described.